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## ABSTRACT

A teacher training program, Gender Expectation and Student Achievement (GESA), seeks to produce equal interest and achievement in mathematics, reading, and language arts in boys and girls. The training model is designed to increase the achievement of both sexes and to reduce teachers' gender-stereotyped behavior. It includes teacher workshops, classroom observations of one another's teaching techniques, feedback to support teachers and to have them report changes they are observing in their classrooms, and pre- and post-tests in the selected academic subjects. Students and teachers also respond to a gender-based questionnaire before and after the treatment. Nineteen teachers from five Los Angeles County (California) school districts are participating in the program. Data collection materials are the GESA classroom observation model; mathematics, reading and language arts achievement tests; and the "Who Should" gender bias questionnaire. A discussion is presented on the five areas of gender bias in the classroom: (1) instructional contact; (2) grouping and organization; (3) discipline; (4) self-concept; and (5) evaluation. The GESA training approach to over-coming biased behavior in these areas is described, and results of comparisons of pre-training observations are discussed. Projected follow-up activities are listed. (JD)

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GENDER EXPECTATIONS AND STUDENT ACHIEVEMENT:

A TEACHER TRAINING PROGRAM ADDRESSING  
GENDER DISPARITY IN THE CLASSROOM

BY

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## ABSTRACT

### GENDER EXPECTATION AND STUDENT ACHIEVEMENT (GESA)

Developed by: Dolores A. Grayson and  
Mary D. Martin

- A. Objectives. The program seeks to produce equal interest and achievement in mathematics, reading, and language arts in boys and girls in classrooms of teachers receiving GESA training. It seeks to reduce gender stereotyping by these teachers, to increase non-stereotypical interaction with students, and to equalize the frequency of interactions with boys and girls.
- B. Perspective or Theoretical Framework. Overt stereotyping by gender is less prevalent than it was 20 years ago, but social pressures remain, stifling abilities of both boys and girls that might have come to fruition without these pressures. Teacher interactions with students tend to support gender stereotyping; boys tend to receive more classroom attention than girls. The effort to alleviate this is based on the TESA model developed by the Los Angeles County Schools, which trains teachers not to discriminate against students on the basis of perceived ability but to interact with them all in an equitable fashion.
- C. Methods. A training model designed to increase the achievement of both boys and girls and to reduce teachers' gender-stereotyped behavior is now being developed. It includes teacher workshops, classroom observations by participants of one another's teaching techniques, and feedback to support teachers and to have them report changes they are observing in their classrooms and pre- and post-tests in mathematics, reading and language arts. Students and teachers also respond to a gender-based questionnaire before and after the treatment.
- D. Data Source. Training participants are 19 teachers from 5 Los Angeles County districts. Target students number about 600: 49% Hispanics, 25% white, 21% Asian, and 5% Black. Data collection materials are the GESA classroom observation model; mathematics, reading and language arts achievement tests; and the "Who Should" gender bias questionnaire.
- E. Point of View. TESA data have demonstrated that, despite teachers' overt intentions to treat all students equitably, gender bias is still all too pervasive. Both male and female teachers tend to interact less often with high-achieving girls; this suggests a persistent, perhaps unconscious, bias to limit their achievement across all grade levels, K-12. This is true despite the fact that data suggest that teachers' initial expectations tend to favor girls. Accordingly, a project to reduce classroom gender bias has become urgently necessary.
- F. Educational Importance of the Study. Noted educators agree that equity is fundamental to excellence. Neither boys nor girls can fully participate in educational opportunities as long as classrooms reinforce only behavior which conforms to gender stereotypes. The cost to the nation in lost potential and frustrated abilities is great, and includes the steady decline during school years of girls' achievement in mathematics and science.

The GESA program offers specific techniques for countering these losses with an educationally sound and positive approach.

## GENDER EXPECTATIONS AND STUDENT ACHIEVEMENT (GESA)

During the past several decades, there have been many studies focusing on teacher expectations and classroom interactions as they relate to academic achievement. The last ten to twelve years have produced more specific studies on differential treatment by gender. The Gender Expectations and Student Achievement (GESA) program has been developed to utilize these findings and to address the major areas of gender disparity in the classroom.

Dr. Shirley McCune, formerly Deputy Assistant Secretary for Equal Educational Opportunities, United States Office of Education, speaking to the Office of the Los Angeles County Superintendent of Schools (OLACSS) staff in 1982 said, "The ultimate in sex equity is found in a positive relationship between the teacher and the student. We need to help teachers understand patterns of responding differentially to students."

In the 70s, McCune and Martha Matthews identified six forms of bias in instructional materials. Heading the list was exclusion or "invisibility" (i.e., "significant omission of ..."). Ironically, with the focus on excellence and education in the 80s, neither the report from the National Commission on Excellence in Education, A Nation at Risk, nor similar reports address the issues related to gender disparity.

The GESA program is based on the premise that in order to insure quality and excellence on an equitable basis, school districts need to directly confront the issue of gender bias in the teachers' interactions with students. Once teachers have examined their own biases as demonstrated by their own behavior toward

male and female students, curricular and other changes can be accepted more easily.

### AREAS OF GENDER DISPARITY

Gender bias in the classroom is evident in five major areas: (1) instructional contact; (2) grouping and organization; (3) discipline; (4) self-concept; and (5) evaluation.

#### Instructional Contact

Good and Brophy, after an extensive review of the research and numerous studies of classroom interaction, concluded that boys receive more instructional contact with their teachers than girls (Good and Brophy, 1978). This conclusion is supported by classroom interaction data collected from thousands of classrooms during the ten years that the OLACSS has conducted the Teacher Expectations and Student Achievement (TESA) project. Although TESA is concerned with the differences in teacher interaction with students perceived as high and low achievers, the data from classroom observations are analyzed by sex as well as by achievement level. Despite the fact that the TESA teachers know the observer is recording interaction with six low and six high achievers to determine whether supportive teaching behaviors are distributed equitably between the two groups, the boys consistently receive more attention. Recent studies by Myra and David Sadker show that male students in elementary, secondary, and postsecondary classrooms receive more teaching attention than female students. Female students were less likely to participate in classroom discussions and more likely to be invisible members of the classes (Newsletter Project Effect, 1984).

The TESA data indicated that teachers are more apt to help boys individually, to ask them questions, to wait for their response, to delve if they have

difficulty responding, and to ask them higher level questions. Good and Brophy found that boys were asked a higher percentage of process questions than girls, who were more apt to be asked product or choice questions (Good et.al., 1972).

In a landmark study on motivation, Sears concluded that teachers orient academic activities to the superior boys (Sears, 1963).

Many studies have shown that the extent to which a student is involved in the instructional process correlates with achievement. The TESA findings prove that providing as much instructional support to low achievers as to high achievers results in increased learning among all students (Kerman, Kimball, and Martin, 1980). Clearly, the deficit in instructional attention experienced by girls contributes heavily to the decrease in the achievement level of girls as they move up through the grades.

#### Grouping and Organization

The Sadkers, in an NIE-supported study, found that "one out of every three classrooms is segregated by sex. At other times, students segregate themselves through seating and lines of work and play activities." (Newsletter Project Effect, 1984)

Anyone who has frequently observed classrooms knows that teachers most often are working with small groups of boys or organize the room so that a small cluster of boys surround the teacher's desk. Adams and Biddle (1970) videotaped 16 classrooms at grade levels one, six, and eleven. In all the classrooms, they found that the students most likely to be asked questions or to participate in discussions were seated in a T-shaped area directly in front of the teacher. Sixty-three percent of the time that a student spoke, that student was in one of the first three seats in the stem of the T.

#### Discipline

Boys receive more criticism and punishment for misbehavior than girls (Jackson



and Lahaderne, 1967; Safilios-Rothschild, 1979). This both reflects and reinforces the stereotype of girls as docile and boys as aggressive. This contributes to the greater amount of teacher contact boys receive. Curiously enough, in one study, teachers admitted that they discouraged girls' aggressive behavior more than boys (and encouraged aggression more in boys) even though they perceived boys as more aggressive (Chasen, 1974). According to the Sadkers' studies, even when boys and girls are misbehaving equally, the boys are more likely to get harsher reprimands (Sadker and Sadker, 1982).

### Self Concept

The classroom is a crucial force in shaping the self-concepts of boys and girls. Best, reporting her longitudinal observations in an elementary school, described this "second curriculum" as follows:

"For some time social psychologists and students of human development have been greatly preoccupied with the processes of socialization that prepare boys and girls for appropriate gender roles. Thus, along with the first, or academic curriculum -- reading, writing, and arithmetic -- there was a second or gender-role curriculum in operation which taught the children the traditional role behavior for their sex. It taught little girls to be helpful and nurturant. It taught little boys to distance themselves from girls, to look down on them, and to accept as their due the help that girls offered... The second curriculum did an effective job of teaching each sex how to perform according to conventional gender norms... It was not as successful in teaching the boys and girls how to relate to one another." (Best, 1983, 4-5)

Best also found that the differences between boys and girls in sex role socialization became especially marked in the fourth grade. The impact of this gender differentiation was earlier reported by Sears in her analysis of self-concept scores. More of the low-ability boys tended to give themselves a high self-concept than girls; and more high ability girls than boys tended to give themselves a low self-concept (Sears, 1963).

Baumgartner-Papageorgiou's (1982) study indicates that "both males and females are taught that being male is inherently better than being female."

### Evaluation

Lee and Wolinsky (1973) found that boys were subject to more evaluation, i.e., feedback regarding their performance, than girls, whether the feedback expressed approval or disapproval. Brophy and Good (1970) reported that boys were praised more frequently than girls after giving the correct answer. Boys were also criticized more often for incorrect responses or for failing to respond, which Safilios-Rothschild (1979) suggested places boys under greater pressure to succeed. In the TESA project, boys were more apt to be told whether their performance was acceptable, to be praised for good performance, and to be given reasons for such praise.

Many educators have long believed that public evaluation does not help girls in working toward academic goals but is facilitating for boys. As early as 1925, a careful study by Hurlock looked at the achievement of students who were praised, reproved and ignored. Both boys and girls responded best to praise. The boys did respond slightly better than the girls to reproof. However, the ignored group achieved the least. Thus, the saliency that boys hold for teachers in both criticizing and praising places girls at a disadvantage.

### EXAMPLES OF SIMILAR EFFORTS

#### Teacher Expectations and Student Achievement (TESA)

The GESA program is adapted from the inservice training model developed by OLACSS staff for the Teacher Expectations and Student Achievement (TESA) project. TESA addresses the differential expectations teachers hold for students labeled low achievers. Like TESA, GESA training is designed around monthly meetings where teacher behaviors which reflect expectations are discussed followed by the teachers observing and coding each other's interactions in the classroom. This



provides an action research climate in which teams of teachers examine the impact of deliberately counteracting gender bias on their own and their students' behavior and on student learning.

The TESA model has been highly successful. TESA coordinator workshops are held monthly in four locations throughout the United States and the trained coordinators have conducted TESA teacher training in school districts in most states as well as in other countries, notably Australia and Canada, and in Puerto Rico. TESA received a National Pacesetter Award in 1974 and is now recognized as one of the two or three most successful staff development programs in the nation.

#### Intersect

Intersect also focuses staff training on how the teacher interacts with students in the classroom. A videotape and training manuals developed by Myra and David Sadker, Leslie Hergert, and Jo M. Jarvis are available to assist school districts in conducting training sessions and observations on gender bias in classroom interaction. The updated research from Intersect was utilized when determining the major areas of disparity for GESA and the videotape is included in Units I and V of the training.

#### Project Effect

Directed by Myra and David Sadker, Project Effect is just getting under way at the American University in Washington, D. C., under a grant from the Fund for the Improvement of Postsecondary Education. The project is an outgrowth of Intersect and of research on gender bias in teacher-student interaction funded by NIE. Project Effect involves 25 college level instructors in studying classroom interaction, trying out new skills in their classroom, and receiving feedback from observers.

The GESA program is a culmination of eight years of collecting and comparing data and effective strategies. This has included exchanging ideas with other colleagues regarding their research relating to gender-based classroom interactions. The following sources have contributed valuable information. Lockheed and Harris (1982) have looked at the student as the stimulus to teacher behavior and their studies on student to student interaction have challenged many previous theories.

Much of the work resulting from the five WEEA funded model demonstration sites has been utilized. Schubert's (1983) report and expertise have contributed to the knowledge base upon which GESA has been developed. Schubert has worked as a consultant during the developmental stage of the program and constructed the draft matrix of the GESA conceptual framework.

Finally, the GESA program director has been in contact with the Sadkers over a period of years. GESA and Project Effect seem to be mutually supportive endeavors. Continued contact between the two programs (including sharing of products) is anticipated.

#### TRAINING APPROACH

GESA is based on widely-held theories of change management and staff development. The basic concepts underlying GESA are as follows:

##### Expectations

Teachers' gender-based expectations are reflected in what and how they teach and often place limits on what students can learn. Therefore, the GESA training sessions focus on how gender-based expectations are reflected in the classroom.

##### Attitudinal Change

Attitudes are resistant to change. Repeated reinforcement over a span of time

is required for attitudinal change. Therefore, the GESA training is organized in five monthly workshops with structured practice in the classroom between workshops.

### Behavior Change

Attitudes are reflected in behavior. If that behavior is changed and the new behaviors are rewarded, attitudinal change is likely to follow. Therefore, the GESA participants are observed in the classroom demonstrating gender-free teacher/student interactions. Immediate feedback from the observer provides immediate reward. However, the TESA experience suggests that the most meaningful reward for the teachers is the responses of their students.

### Climate for Change

Administrative support and a supportive network of colleagues create a climate in which change can occur. Therefore, GESA involves key administrators in cooperating school districts and teams of teachers at each participating school. GESA training sessions include ample time for sharing progress reports.

### Ownership

Change is more likely to occur if the participants feel they are playing an important role in the process. Therefore, the teams of teachers participating in GESA also observe and code interactions in each other's classrooms. This gives each participant a crucial role in the training process.

### Dissemination

A new program is most likely to survive beyond the funded period and to be replicated if a process for inexpensive replication is built in. Therefore, teachers who have completed training have the option of being trained as GESA trainers which will enable them to replicate GESA in their school districts.

## METHOD OF DEVELOPMENT

### Content

A small amount of developmental money is available to OLACSS consultants for developing and testing innovative ideas. The Program Director applied for and received a modest amount to work with five school districts during the 1983-1984 school year in the initial development of the GESA model. The training content was identified and five training sessions about one month apart were planned. The accompanying chart (Figure I) shows the themes for each training session which are based on the five areas of gender disparity identified from the literature. The second column gives the teacher/student interactions which are defined and discussed in the workshop and become the basis for classroom observations following the workshop. The interactions were selected because the literature indicates that these are teaching behaviors which tend to reflect gender bias. (This literature is summarized in the GESA training materials.) The third column is the curriculum related concerns, which are also addressed in each workshop.

The training incorporates the three primary factors directly related to academic achievement: Curriculum, Learning Environment and Interactions.

During this experimental period, the nineteen participating teachers have recorded student reactions to assess which interactions are the most powerful and have tried out several different procedures for coding observations. Full day training sessions allow ample time for getting feedback from the teachers in the pilot phase.

The curriculum-related portion of the training focuses on understanding of the gender equity issues involved and acquainting the participants with resources



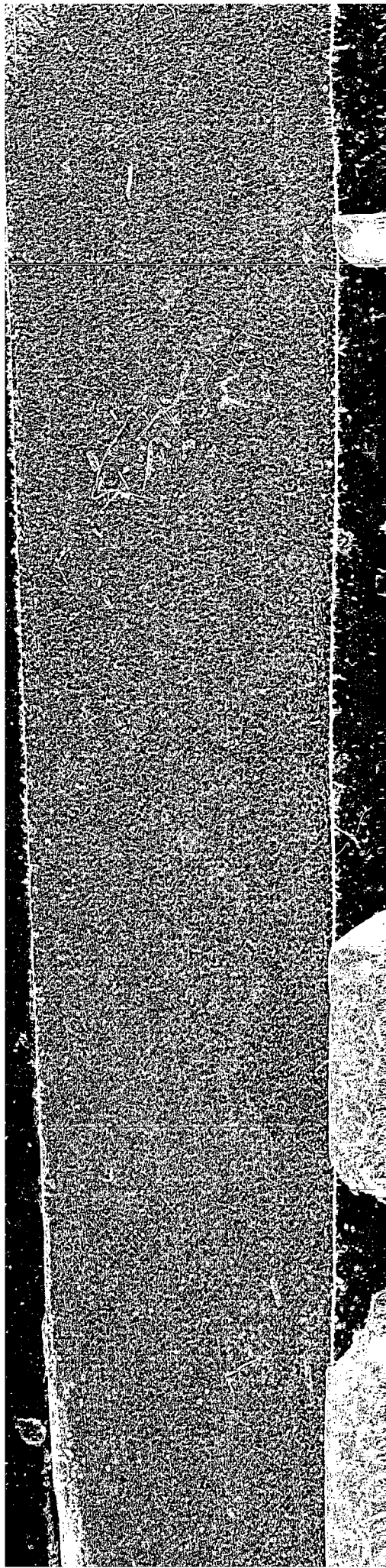


FIGURE 1  
GENDER EXPECTATIONS AND STUDENT ACHIEVEMENT (GESA)

<u>FIVE MAJOR AREAS OF DISPARITY</u> (WORKING THEMES)	<u>LEARNING CLIMATE</u> (INTERACTIONS)	<u>INSTRUCTIONAL MANAGEMENT</u> (CURRICULUM-RELATED)
I. INSTRUCTIONAL CONTACT	RESPONSE OPPORTUNITIES	EVALUATING MATERIALS FOR BIAS
II. GROUPING/ORGANIZATION	NAMES/LATENCY/PROXIMITY	MATH/SCIENCE/COMPUTER USAGE
III. DISCIPLINE	LISTENING/TOUCHING/REQUESTS TO DESIST	MULTICULTURAL RESOURCES
IV. SELF CONCEPT	DELIVING/PERSONAL REGARD STATEMENTS (COURTESY, COMPLIMENTS)	WOMEN'S HISTORY MATERIALS
V. EVALUATION	HIGH LEVEL QUESTIONING/ FEEDBACK/REASONS FOR FEEDBACK	PHYSICAL ACTIVITY

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available to them, especially products developed with CRA Title IV and Women's Educational Equity Act funding. A number of OLACSS staff members with appropriate specialties have contributed to the training, including the multi-cultural education consultant and an intergroup relations consultant (speaking on self-concept). To ensure the low cost replicability of the program, this portion of the training emphasizes the use of locally available and inexpensive resources.

The materials developed during the experimental training, including descriptions of the interactions and instructions for observing and coding, are being refined and assembled into a draft copy of a GESA teacher manual which will be further polished based on feedback from teachers and trainers during the school year 1984-1985.

### Process

Nineteen elementary (3,4,5,6th grades) teachers attend monthly training sessions at the Los Angeles County Education Center. (These will be half-day sessions in the future, rather than the full-day sessions currently being conducted. This will reduce the cost of substitutes to release teachers. Also, less time for feedback and planning will be required than in this year's experimental phase.)

Following each workshop the teams of four teachers from a district observe teacher/student interaction in each other's classrooms a minimum of three times. Each observation session is 30 minutes. The observing teacher records the number of times a teacher interacts in the ways specified for that unit with girls and the number of times with boys. At this time, we are experimenting with targeting particular students to be observed as is done in TESA compared to simply coding interaction with boys and girls. This permits dyadic coding

(i.e., coding of interaction with a specific student) which enables the teacher to identify those students who are being ignored or treated differently from others. The observing teacher leaves the coding sheet with the demonstrating teacher to provide immediate feedback. Observation methods are discussed and practiced in the workshop, and the teachers are generally effective and accurate observers when evaluated by comparing coding of a teacher participant and a staff member. However, the observation data are for learning purposes, not for research or evaluation. The observations serve as an impetus for the demonstrating teacher to practice the interactions with students and provide a laboratory in which the observing teacher can examine the impact of teacher interaction on student behavior. Therefore, the occasional observer's lapse from objective coding (such as a teacher who, during Unit III, held up a paper on which she had scribbled, "Touch-Elaine") does not impair the project.

Teachers report serendipitous outcomes of the observation process including adapting instructional and management procedures and becoming accustomed to having a visitor in the classroom.

At the following workshop, time is provided for teachers to share student reactions. As the training progresses and the teachers become aware of the changes in themselves and their students, this sharing process builds enthusiasm to a surprisingly high pitch.

### Findings

Most of the specific workshop data will be compiled and analyzed during the summer of 1984 following completion of the developmental phase. (The teachers are currently observing and coding the 5th unit and are scheduled to convene on

April 30, 1984 for a final session.) However, some of the following results are evidenced by comparison of pre-training observations, monthly summaries of coding sheets and responses to a mid-project survey:

- (1) Teachers participating in GESA training have reduced the disparities in their interactions with males and females.
- (2) All participating teachers have identified at least one curricular change implemented in their classrooms during the training period for the purpose of reducing gender bias.
- (3) All participating teachers report benefiting professionally from involvement in collegial observation and coding and have talked with their principals and other staff members about their involvement in GESA.
- (4) Most participating teachers report positive attitudinal changes in themselves and positive effects on their students, as a result of their participation in GESA.
- (5) All participating teachers have identified at least one major area of disparity and a specific interaction that has impacted their classroom and been most beneficial to them as a teacher.

Student achievement scores for reading and math will be analyzed for gains during the teacher participation in GESA. In addition, a sample of students will respond to a gender expectations post-test ("who should...") for comparison with pre-training scores.

#### PROJECTED FOLLOW-UP ACTIVITY

##### Training of Trainers

Since the teacher training model is straightforward and easily replicated, the development of a model for training trainers is practical. A training packet

similar to that developed for TESA is being drafted. A trainer workshop (not to exceed three days) will be conducted in August, 1984. The participants will be selected from among the five teams (19 teachers from 5 districts) who are currently participating in the experimental phase.

The trainers will implement GESA at their own sites with the support of the GESA staff. Several feedback sessions will be held to discuss how the trainer model can be improved and solutions to problems encountered by the trainers.

#### Development of Teacher and Trainer Handbooks

To facilitate dissemination of GESA, handbooks will be developed for both teacher participants and trainers. All the materials and information necessary to replicate the project will be included. OLACSS has the facilities to produce such handbooks and sell them at cost. The possibility of obtaining a publisher will be entertained if the market for the handbook appears to be sufficient. (TESA handbooks are published and distributed by Phi Delta Kappa; last year, 7,500 copies were sold.)

#### Dissemination

The OLACSS Educational Equity Office will assume responsibility for disseminating the GESA model. Dissemination activities will include --

- o conducting trainer workshops;
- o providing technical assistance to trainers replicating the teacher training within their school districts;
- o distributing handbooks at cost; and
- o publicizing the availability of the above using various OLACSS publications and through organizations and projects/centers concerned with equity.

Since GESA has already aroused considerable interest among groups concerned with equity throughout the nation, we anticipate that the trainer workshops will attract participants from beyond Southern California.

## REFERENCES

- Adams, R. and Biddle, B., Realities of Teaching: Explorations with Video Tape. New York: Holt, Rinehart and Winston, Inc., 1970.
- Baumgartner-Papageorgiou, A. "My Daddy Might Have Loved Me": Student Perceptions of Differences Between Being Male and Being Female. Institute for Equality in Education, Denver: University of Colorado, 1982.
- Best, Raphaela, We've All Got Scars: What Boys and Girls Learn in Elementary School. Bloomington: Indiana University Press, 1983.
- Brophy, J. and Good, T., "Teachers' Communication of Differential Expectations for Children's Classroom Performance: Some Behavioral Data." Journal of Educational Psychology, 61, 1970, 365-374.
- Chasen, B., "Sex Role Stereotyping and Pre-Kindergarten Teachers." Elementary School Journal, 74, 220-235.
- Good, T. and Brophy, J., Looking in Classrooms. New York: Harper & Row, Publishers, 1978.
- Good, T., Sikes, J. and Brophy, J., "Effects of Teacher Sex, Student Sex, and Student Achievement on Classroom Interaction." Technical Report No. 61, Center for Research in Social Behavior. Columbia: University of Missouri, 1972.
- Hurlock, E., "An Evaluation of Certain Incentives Used in Schoolwork." Journal of Educational Psychology, 16 (1925), 145-149.
- Jackson, P. and Lahaderne, H. "Inequalities of Teacher-Pupil Contacts." Psychology in Schools, 4 (1967), 204-208.
- Kerman, S., Kimball, T. and Martin, M. Teacher Expectations and Student Achievement. Bloomington, Indiana: Phi Delta Kappa, 1980.
- Lee, P. and Wolinsky, A., "Male Teachers of Young Children: A Preliminary Empirical Study." Young Children, 28, 342-352.
- Lockheed, M. E. and Harris, A. M. "Classroom Interaction and Opportunities for Cross-Sex Peer Learning in Science." Paper presented at the Annual Meeting of the American Educational Research Association, New York, 1982.
- McCune, S. and Matthews, M. (Eds.), Implementing Title IX and Attaining Sex Equity: A Workshop Package for Post-secondary Educators. Washington, D.C.: U. S. Government Printing Office, 1978.
- Newsletter: Project Effect, 1, Washington, D. C., 1984.
- Sadker, M. and Sadker, D., Sex Equity Handbook for Schools. New York and London: Longman, Inc., 1982.



Safilios-Rothschild, C., Sex Role Socialization and Sex Discrimination: A Synthesis and Critique of the Literature. Washington, D. C.: National Institute of Education (1979).

Schubert, J. G. An Interactive Approach to Infusing Equity: A Teacher Model. AERA paper, Montreal, 1983.

Sears, P., The Effect of Classroom Conditions on the Strength of Achievement Motive and Work Output of Elementary School Children. Stanford: Stanford University, 1963.

